

DRUG ALLERGY

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Adverse drug reaction (ADR)

- ⦿ defined by the WHO- as an unintended, noxious response to a drug that occurs at a dose usually prescribed for human patients

Classification of adverse drug reactions

- ◎ **Type A: predictable; strictly dose dependent**
 - *80% of all side effects*
 - Pharmacological side effects (e.g. gastrointestinal bleeding under treatment with NSAID)
 - 1) overdose, 2) side effects and 3) drug interactions.
- ◎ **Type B: not predictable; usually not dose dependent, and sometimes reactions to very small amounts**
 - *15-20% of all side effects*
 - 1) Immunologic/allergic
 - 2) Non-immune mediated, “pseudoallergic”
 - 3) Idiosyncratic
 - 4) Intolerance to drugs

Drug allergy

- ⦿ unpredictable and dose independent adverse reaction
- ⦿ Produced by a broad spectrum of mechanisms
- ⦿ Various clinical presentation
- ⦿ occurring in susceptible subjects

Pathophysiology of drug reactions

⦿ Antigenicity of drugs

- Hapten concept
- Prohapten concept
- p-i (pharmacological interaction with immune receptors) concept

⦿ Classification of drug reactions

- Type I
- Type II
- Type III
- Type IV
 - a, b, c, d reactions

Clinical presentation

- ⦿ Skin manifestations are the most common (about 80-90%);
- ⦿ Hematologic manifestations;
- ⦿ Effects on the liver;
- ⦿ Renal manifestations;
- ⦿ Pulmonary manifestations.
- ⦿ Systemic manifestations

Identifying the responsible drug

1. History
2. Experience with the drug: books indicating specific side effects of drugs
3. Definition of presumed pathomechanism (IgE, T-cell, IgG)
4. Skin tests with non toxic preparations of the drug
 - Skin prick test (SPT); Intradermal test (IDT)
 - Late reading IDT and patch tests
5. Serology/specific IgE
 - Drug specific IgE (available for few drugs only)
 - Coombs-test in the presence of drug in hemolytic anaemia
6. Lymphocyte transformation/activation test
7. Drug provocation tests

Laboratory tests for serious reactions

Immediate reactions

- ⦿ Serum tryptase
- ⦿ Serum histamine

Delayed reactions

- ⦿ Complete blood count: eosinophilia and lymphocytosis, leukocytosis
- ⦿ Liver function tests: ↑ ALT, AST, γGT, ALP
- ⦿ ↑ Serum creatinine
- ⦿ Urine microscopy and dipstick: nephritis, proteinuria
- ⦿ (CRP ↑↓)

Immediate reactions

Skin prick and intradermal tests

- ⦿ For IgE-mediated reactions
- ⦿ Skin prick test (SPT), Intradermal test (IDT)

Treatment

- ⦿ Stop the suspected drug/ drugs
- ⦿ Resuscitation in serious reactions
 - ABC (airway, breathing, circulation) in anaphylaxis
- ⦿ Drugs:
 - Antihistamine: i/v, oral.
 - i/m epinephrine: anaphylaxis
 - Systemic corticosteroids: for SJS
 - High dose IVIG 1g/kg/d x 2 days : for early TEN/SJS overlap, TEN
- ⦿ Emollients & Skin care
- ⦿ Hydration and prevention of skin superinfection (TEN)
- ⦿ Desensitization